

CLAIMS

5 1. A user interface for use with a computer, comprising:
 an at least partially transparent roller; and
 a sensor system, associated with the transparent roller, operable in
a first mode to sense the image of a fingerprint and operable in a second mode to
sense the rotational motion of the roller.

10 2. A user interface as claimed in claim 1, further comprising:
 at least one manually actuatable element.

15 3. A user interface as claimed in claim 2, wherein the at least one
manually actuatable element comprises a button.

20 4. A user interface as claimed in claim 2, wherein the at least one
manually actuatable element comprises a pair of buttons located on opposite
sides of the roller.

 5. A user interface as claimed in claim 2, wherein the at least one
manually actuatable element comprises a plurality of keys together defining a
keyboard.

25 6. A user interface as claimed in claim 2, wherein the at least one
manually actuatable element comprises a touch pad.

30 7. A user interface as claimed in claim 1, wherein the sensor system
includes a light sensor and a light source that emits light which passes through the
roller.

8. A user interface as claimed in claim 1, further comprising:
a movement tracking device that tracks the movement of the user interface as it is moved over a surface.

5 9. A user interface for use with a computer, comprising:
an at least partially transparent roller;
a light source that emits light which passes through the roller;
a light sensor that receives reflected light;
a rotational motion sensor associated with the roller that senses
10 rotational motion of the roller; and
a control system, associated with the light source, light sensor and rotational motion sensor, the control system being operable in a first mode to enable operation of the light source, light sensor and rotation motion sensor and operable in a second mode to enable operation of the rotation motion sensor and
15 disable operation of at least one of the light source and at least a portion of the light sensor.

20 10. A user interface as claimed in claim 9, further comprising:
at least one manually actuatable element.

11. A user interface as claimed in claim 10, wherein the at least one manually actuatable element comprises a button.

25 12. A user interface as claimed in claim 10, wherein the at least one manually actuatable element comprises a pair of buttons located on opposite sides of the roller.

30 13. A user interface as claimed in claim 10, wherein the at least one manually actuatable element comprises a plurality of keys together defining a keyboard.

14. A user interface as claimed in claim 10, wherein the at least one manually actuatable element comprises a touch pad.

15. A user interface as claimed in claim 9, further comprising:
5 a movement tracking device that tracks the movement of the user interface as it is moved over a surface.

16. A computer system, comprising:
a user interface including an at least partially transparent roller;
10 an image sensor associated with the roller that senses the image of a fingerprint and generates fingerprint image data;
a rotational motion sensor associated with the roller that senses rotational motion of the roller and generates roller motion data; and
a control system associated with the image sensor and rotational
15 motion sensor, the control system being operable in a first mode to convert the fingerprint image data and rotational motion data into data representative of the scanned fingerprint and operable in second mode to control an operation of the computer system in response to the roller motion data.

20 17. A computer system as claimed in claim 16, wherein the control system comprises at least one processor.

18. A computer system as claimed in claim 17, further comprising:
a computer housing in which the processor is located.

25 19. A computer system as claimed in claim 18, further comprising:
a display pivotably connected to the computer housing.

20. A computer system as claimed in claim 18, wherein the user
30 interface is mounted on the computer housing.

21. A computer system as claimed in claim 17, further comprising:
a user interface housing separate from the computer housing.

22. A computer system as claimed in claim 16, wherein the user
5 interface includes a touch pad and buttons.

23. A computer system as claimed in claim 16, wherein the user
interface includes a keyboard.

10 24. A computer system as claimed in claim 16, wherein the image
sensor comprises:

a light source that emits light which passes through the roller; and
a light sensor that receives light reflected through the roller.

15 25. A computer system as claimed in claim 24, wherein the control
system disables at least one of the light source and at least a portion of the light
sensor in the first mode.

20 26. A computer system as claimed in claim 16, wherein the operation of
the computer system comprises a scrolling operation.

27. A method of operating a computer system including an at least
partially transparent roller, the method comprising the steps of:

receiving data corresponding to rotational motion of the roller;

25 using the data corresponding to rotational motion of the roller to
generate data corresponding to a fingerprint when the computer system is in a
fingerprint scanning mode; and

30 using the rotational motion of the roller to control a predetermined
aspect of computer system operation when the computer system is not in the
fingerprint scanning mode.

28. A method as claimed in claim 27, wherein the predetermined aspect of the computer system operation comprises scrolling.

29. A method as claimed in claim 27, further comprising the steps of:

5 directing light through the at least partially transparent roller onto a finger during the fingerprint scanning mode;

sensing light reflected by the finger;

generating data corresponding to the light reflected by the finger;

and

10 using the data corresponding to the light reflected by the finger to generate data corresponding to a fingerprint.

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